

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A bipolar current collector separator for a fuel cell composed of a metal plate having flow channels and contact faces that come into contact with electrodes an electrode or collectors a collector, wherein a corrosion-resistant layer is disposed on each of said flow channels and further wherein:

said corrosion-resistant layer is an anodized aluminum layer or a heat-resistant polymer layer.

2. (original) The bipolar current collector separator according to claim 1, wherein said metal plate is made of aluminum or an aluminum alloy, and said corrosion-resistant layer is an anodized aluminum layer.

3. (original) The bipolar current collector separator according to claim 2, wherein said anodized aluminum layer is composed of a dense anodized aluminum layer having a porosity of less than 5%.

4. (original) The bipolar current collector separator according to claim 3, wherein said dense anodized aluminum layer has a thickness of 5 to 50 .mu.m.

5. (original) The bipolar current collector separator according to claim 2, wherein said anodized aluminum layer is composed of a dense anodized aluminum layer having a porosity of less than 5%, and a porous anodized aluminum layer having a porosity of 5% or more provided on said dense anodized aluminum layer.


6. (original) The bipolar current collector separator according to claim 2, wherein said aluminum has a purity of 99.5% or more.

7.(currently amended) The bipolar current collector separator according to claim 2, wherein a corner portion formed between surfaces of said flow channel is in the shape of a curved surface having a curvature radius of 0.5 mm or more.

8.(currently amended) The bipolar current collector separator according to claim 2, wherein a corner portion formed between a side surface of said flow channel and said

contact face is in the shape of a curved surface having a curvature radius of 0.3 mm or more.

9.(original) The bipolar current collector separator according to claim 1, wherein said corrosion-resistant layer is a heat-resistant polymer layer.



10. (original) The bipolar current collector separator according to claim 9, wherein said heat-resistant polymer layer is water repellent.

11. (original) The bipolar current collector separator according to claim 9, wherein said heat-resistant polymer layer is made of a polymer material selected from the group consisting of vinyl resins, polyvinyl chloride, polytetrafluoroethylene, polyvinylidene fluoride, aromatic polyamides, polyimides, polycarbonates, polybutylene terephthalate, polyethylene terephthalate, polyesters, polystyrene, copolymers of styrene and another monomer, polyethylene, polypropylene, polyurethanes, silicone resins, polysulfones, polyethersulfones, rayon, cupra, acetate resins, promix, vinylon, vinylidene resins, acrylic resins and derivatives thereof

12. (original) The bipolar current collector separator according to claim 9, wherein said heat-resistant polymer layer has a multi-layered structure comprising two or more layers.

13. (original) The bipolar current collector separator according to claim 9, wherein said metal plate is made of aluminum or an aluminum alloy.


14. (original) The bipolar current collector separator according to claim 13, wherein an anodized aluminum layer is provided on said flow channel, said heat-resistant polymer layer being disposed on said anodized aluminum layer.

15. (original) The bipolar current collector separator according to claim 14, wherein said anodized aluminum layer is composed of a porous anodized aluminum layer having a porosity of 5% or more.

16. (original) The bipolar current collector separator according to claim 14, wherein said anodized aluminum layer is composed of a dense anodized aluminum layer having a porosity of less than 5%, and a porous anodized aluminum layer having a porosity of 5% or more provided on said dense anodized

aluminum layer.

17. (original) The bipolar current collector separator according to claim 13, wherein said aluminum has a purity of 99.5% or more.

 18. (currently amended) The bipolar current collector separator according to claim 1, wherein a conductive film is disposed on one of said contact ~~face~~faces.

19. (currently amended) The bipolar current collector separator according to claim 18, wherein said conductive film is made of ~~[[:]]~~ a metal selected from the group consisting of Pt, Au, Pd, Ru, Rh, Ir, Ag, mixtures thereof and alloys composed thereof, carbon; or a conductive carbide.

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